

## Index to Volume 39

- Alurkar, S. K.—  
See Slee, O. B. 103
- Alurkar, S. K., Slee, O. B., and Bobra, A. D.—  
Scattering of pulsar radiation and electron  
density turbulence in the interstellar  
medium 433
- Amos, K.—  
See Di Marzio, F. 203
- Andrew, A. L.—  
See Fiedler, R. A. S. 99
- Assafiri, Y. I.—  
See Eden, J. A. 871
- Atomic and molecular physics*
- Analysis and understanding of ionisation  
phenomena: *ab initio* molecular  
wavefunctions 731
- Application of Blanc's law to the  
determination of the diffusion coefficients  
for thermal electrons in gases 237
- Auger electron-ion coincidence studies to  
determine the pathways in soft X-ray  
induced fragmentation of isolated  
molecules 633
- Current developments in the relativistic  
quantum mechanics of atoms and  
molecules 649
- Current status and future directions of atomic  
studies by electron spectrometry with  
synchrotron radiation 601
- Deexcitation electron spectroscopy: a probe  
for the localisation of valence wavefunctions  
in free and adsorbed molecules 853
- Dependence of measured drift velocity on  
shutter open time in the four gauge time-of-  
flight method 225
- Determination of the diffusion coefficient for  
thermal electrons in water vapour by the use  
of a modified Blanc's law procedure 249
- Dynamics of single- and multi-photon  
ionisation processes in molecules 761
- Electron momentum spectroscopy 587
- Excitation of swift heavy ions in foil targets.  
II. X-radiation from Br 15
- Excited-state quenching phenomena in weakly  
ionised nitrogen 479
- Full CI extrapolation: application to H<sub>2</sub>O with  
a double zeta basis set 711
- Inclusion of relativistic effects in electronic  
structure calculations 667
- Mobility of K<sup>+</sup> ions in helium and argon 25
- Multivacancy effects in atomic and molecular  
spectra 845
- Numerical simulation of positron diffusion in  
the heavy noble gases Ar, Kr and Xe 497
- Numerical variational method for calculating  
accurate vibrational energy separations of  
small molecules and their ions 749
- Photoelectron spectroscopy using pulsed free  
jets 789
- Photoionisation and Auger electron emission  
from the lithium molecule: calculations  
using multicentre numerical continuum  
functions 809
- Photoionisation cross sections of chlorine  
atoms and molecules at 584 Å 779
- Photoionisation of unusual states of matter:  
atomic ions, excited states and open-shell  
atoms 799
- Polarisation and angular correlations of  
excited P states of helium and hydrogen  
621
- Recent developments in atomic lifetime  
determinations 829
- Recent progress in a Green's function method  
for the calculation of ionisation spectra  
687
- Relativistic effects in the photoionisation of  
heavy atoms: Cooper minima 679
- Satellite intensities in photoelectron  
spectroscopy and electron momentum  
spectroscopy—synchrotron radiation  
studies of argon 3s and xenon 5s  
photoionisation ( $h\nu = 60\text{--}130\text{ eV}$ ) 565
- X-ray emission spectra of some carbon-  
containing molecules 717
- Awin, A. M.—  
Enhancement of parity violation for  
overlapping nuclear resonances 217
- Baggaley, W. J.—  
Low temperate zone sporadic-E: seasonal and  
diurnal variations at Rarotonga 401
- Bagus, P. S., Nelin, C. J., and Hermann, K.—  
The analysis and understanding of ionisation  
phenomena: *ab initio* molecular  
wavefunctions 731
- Ball, L. T., and Hewitt, R. G.—  
Finite Larmor radius modifications to the  
magnetoionic wave modes and their effects  
on electron cyclotron maser emission 407
- Batchelor, R. A.—  
See Macfarlane, J. C. 379
- Berge, L., and Petris, L.—  
A phenomenological nucleon-nucleon  
interaction 461
- Bhattacharya, S. K.—  
See Manson, S. T. 799
- Bobra, A. D.—  
See Alurkar, S. K. 433  
Slee, O. B. 103
- Boris, J. P.—  
See DeVore, C. R. 115

- Brion, C. E., and Tan, K. H.—  
Satellite intensities in photoelectron spectroscopy and electron momentum spectroscopy—synchrotron radiation studies of argon 3s and xenon 5s photoionisation ( $h\nu = 60\text{--}130\text{ eV}$ ) 565
- Burman, R. R.—  
Relativistic electron injection into axisymmetric pulsar magnetospheres 421
- Burton, P. G.—  
See Doherty, G. 749  
Gray, P. D. 711
- Butselaar, R. J.—  
See van der Meer, W. J. 779
- Carnovale, F., Peel, J. B., and Rothwell, R. G.—  
Photoelectron spectroscopy using pulsed free jets 789
- Carr, R.—  
See Eberhardt, W. 633
- Cassidy, R. A., and Elford, M. T.—  
The mobility of  $K^+$  ions in helium and argon 25
- Cederbaum, L. S.—  
See von Niessen, W. 687
- Cheetham, A. D., Hamberger, S. M., How, J. A., Kuwahara, H., Morton, A. H., and Sharp, L. E.—  
The LT-4 tokamak. II. MHD activity 35
- Chen, C. T.—  
See Eberhardt, W. 853
- Christie, A. L.—  
See Kaiser, A. B. 909
- Christos, G. A.—  
Alternative scheme of spontaneous chiral symmetry breaking 347
- Ciampa, D.—  
See Clay, R. W. 93
- Clark, A. G., and Tovey, S. N.—  
Experimental aspects of the electroweak gauge theory 117
- Classical areas of phenomenology*  
Intensity correlation functions for 'thermalised' TEM<sub>00</sub> laser beams 505  
Kirkwood theory of shear viscosity in a simple dense fluid 881
- Clay, R. W., and Ciampa, D.—  
Fast timing of air shower fronts 93
- Collings, A. F., and Evans, D. J.—  
Kirkwood theory of shear viscosity in a simple dense fluid 881
- Collins, R. E.—  
See Schmid, R. 919
- Condensed matter: electronic properties, etc.*  
Conduction electron scattering in alloys 529  
Electronic structure of the principal uranium centre in alkali fluorides 555  
Investigation of the interaction of electrons and lattice vibrations using glassy metal thermopower 909  
Phonon spectrum of ternary alloys 547
- Condensed matter: structure, etc.*  
Calculation of the room temperature elastic constants of caesium thiocyanate 309  
Experimental determination of the imaging properties of a 200 kV electron microscope 71
- Cross-disciplinary physics*  
Effect of the flow distribution on the thermal efficiency of a solar collector 945  
Experimental study of noise temperature and conversion loss of SIS junction mixers 379  
Heat transport in liquid filled tubes 919
- de Lange, C. A.—  
See van der Meer, W. J. 779
- Delbourgo, R., Hart, W., and Kenny, B. G.—  
Dependence of the universal constants on the nature of the maximum of the mapping function 189
- Deshmukh, P. C., Tambe, B. R., and Manson, S. T.—  
Relativistic effects in the photoionisation of heavy atoms: Cooper minima 679
- Deslattes, R. D.—  
Multivacancy effects in atomic and molecular spectra 845
- DeVore, C. R., Sheeley, N. R., Jr, Boris, J. P., Young, T. R., Jr, and Harvey, K. L.—  
Corrigendum to: Numerical simulations of large-scale solar magnetic fields 115
- Di Marzio, F., and Amos, K.—  
An analytic distorted wave approximation for electropion and photopion production on  $^{12}\text{C}$  near threshold 203
- Dimmler, G.—  
See Schoenborn, B. P. 329
- Dixit, S. N.—  
See McKoy, V. 761
- Doherty, G., Hamilton, M. J., Burton, P. G., and von Nagy-Felsobuki, E. I.—  
A numerical variational method for calculating accurate vibrational energy separations of small molecules and their ions 749

- Drumm, P. V., Hebbard, D. F., Ophel, T. R., Nurzynski, J., Kondó, Y., Robson, B. A., and Smith, R.—  
Excitation function for  $^{16}\text{O} + ^{24}\text{Mg}$  elastic scattering at  $\theta_{\text{c.m.}} = 90^\circ$  369
- Dubs, R. L.—  
See McKoy, V. 761
- Dyall, K. G.—  
Inclusion of relativistic effects in electronic structure calculations 667
- Eberhardt, W., Plummer, E. W., Chen, C. T., and Ford, W. K.—  
Deexcitation electron spectroscopy: a probe for the localisation of valence wavefunctions in free and adsorbed molecules 853
- Eberhardt, W., Plummer, E. W., Lyo, I. W., Reining, R., Carr, R., Ford, W. K., and Sondericker, D.—  
Auger electron-ion coincidence studies to determine the pathways in soft X-ray induced fragmentation of isolated molecules 633
- Eckhardt, B., Louw, J. A., and Steeb, W.-H.—  
Is there a connection between local and global (in-)stability? 331
- Eden, J. A., and Assafiri, Y. I.—  
Particle-hole description of dipole states in  $^{17}\text{O}$  871
- Elementary particles and fields*  
Alternative scheme of spontaneous chiral symmetry breaking 347  
Experimental aspects of the electroweak gauge theory 117  
Parity violation from SUSY vertex corrections in deep inelastic scattering 449
- Elford, M. T.—  
See Cassidy, R. A. 25  
Ernest, A. 479  
Williams, O. M. 225
- Ernest, A., Haydon, S. C., and Elford, M. T.—  
Excited-state quenching phenomena in weakly ionised nitrogen 479
- Evans, D. J.—  
See Collings, A. F. 881
- Fiedler, R. A. S., and Andrew, A. L.—  
Finite element calculations for non-radial oscillations of stars 99
- Fluids, plasmas and electric discharges*  
Dielectric tensor of weakly relativistic electron distributions separable in momentum and pitch angle 57
- EXAFS spectroscopy by continuum soft X-ray emission from a short pulse laser-produced plasma 253
- Four-wave processes involving two low frequency waves 891
- Influence of the spatial harmonics on the rotating magnetic field current drive 513
- Ionization growth between hyperboloidal needle and plane electrode under r.f. electric fields in  $\text{N}_2$ .  
I. Image intensifier observations and the influence of space charge accumulations 271  
II. Spectroscopic investigations 293  
The LT-4 tokamak. II. MHD activity 35
- Ford, W. K.—  
See Eberhardt, W. 633, 853
- Francey, J. L. A.—  
See O'Keefe, M. J. 945
- Gallagher, B. L.—  
See Kaiser, A. B. 909
- General physics*  
Connection between local and global (in-)stability? 331  
Dependence of the universal constants on the nature of the maximum of the mapping function 189  
Large numbers hypothesis and a relativistic theory of gravitation 339
- Geophysics, astronomy and astrophysics*  
Comptonisation of radiation below the cyclotron frequency in a strong magnetic field 961  
Fast timing of air shower fronts 93  
Finite element calculations for non-radial oscillations of stars 99  
Finite Larmor radius modifications to the magnetoionic wave modes and their effects on electron cyclotron maser emission 407  
Flux densities, spectra and variability of pulsars at metre wavelengths 103  
Interpretation of backscattered HF radio waves from the sea 395  
Low temperature zone sporadic-E: seasonal and diurnal variations at Rarotonga 401  
Relativistic electron injection into axisymmetric pulsar magnetospheres 421  
Scattering of pulsar radiation and electron density turbulence in the interstellar medium 433
- Glanville, S. R., Moodie, A. F., Whitfield, H. J., and Wilson, I. J.—  
Experimental determination of the imaging properties of a 200 kV electron microscope 71

- Grant, I. P.—  
Current developments in the relativistic  
quantum mechanics of atoms and  
molecules 649
- Gray, P. D., and Burton, P. G.—  
Full CI extrapolation: application to H<sub>2</sub>O with  
a double zeta basis set 711
- Grover, P. S.—  
See Singh, V. 497
- Hamberger, S. H.—  
See Cheetham, A. D. 35
- Hamilton, M. J.—  
See Doherty, G. 749
- Hannaford, P., and Lowe, R. M.—  
Some recent developments in atomic lifetime  
determinations 829
- Hart, W.—  
See Delbourgo, R. 189
- Harvey, K. L.—  
See DeVore, C. R. 115
- Hay, H. J., Pender, L. F., and Treacy, P. B.—  
Excitation of swift heavy ions in foil targets.  
II. X-radiation from Br 15
- Haydon, S. C.—  
See Ernest, A. 479  
Sato, N. 271, 293
- Hebbard, D. F.—  
See Drumm, P. V. 369
- Hermann, K.—  
See Bagus, P. S.— 731
- Hewitt, R. G.—  
See Ball, L. T. 407
- Hoare, R., Mardling, R., and Troup, G. J.—  
Intensity correlation functions for  
'thermalised' TEM<sub>00</sub> laser beams 505
- Hollenberg, L. C. L., and McKellar, B. H. J.—  
Parity violation from SUSY vertex corrections  
in deep inelastic scattering 449
- Horsburgh, M. A.—  
See Tallents, G. J. 253
- How, J. A.—  
See Cheetham, A. D. 35
- Hua, G., and Ninio, F.—  
A calculation of the room temperature elastic  
constants of caesium thiocyanate 309
- Hugrass, W. N.—  
The influence of the spatial harmonics on the  
rotating magnetic field current drive 513
- Jaus, W., and Rasche, G.—  
Superaligned Fermi  $\beta$  decays CVC and  
universality 1
- Kaiser, A. B., Christie, A. L., and Gallagher,  
B. L.—  
Investigation of the interaction of electrons  
and lattice vibrations using glassy metal  
thermopower 909
- Kenny, B. G.—  
See Delbourgo, R. 189
- Kondō, Y.—  
See Drumm, P. V. 369
- Krause, M. O.—  
Current status and future directions of atomic  
studies by electron spectrometry with  
synchrotron radiation 601
- Kuwahara, H.—  
See Cheetham, A. D. 35
- Larkins, F. P.—  
See Phillips, R. A. 717
- Larkins, F. P., and Richards, J. A.—  
Photoionisation and Auger electron emission  
from the lithium molecule: calculations  
using multicentre numerical continuum  
functions 809
- Lau, Y. K., and Prokhorov, S. J.—  
The large numbers hypothesis and a relativistic  
theory of gravitation 339
- Louw, J. A.—  
See Eckhardt, B. 331
- Lowe, R. M.—  
See Hannaford, P. 829
- Luther-Davies, B.—  
See Tallents, G. J. 253
- Lynch, D. L.—  
See McKoy, V. 761
- Lyo, I. W.—  
See Eberhardt, W. 633
- McCarthy, I. E.—  
Electron momentum spectroscopy 587
- Macfarlane, J. C., Whitbourn, L. B., and  
Batchelor, R. A.—  
Experimental study of noise temperature and  
conversion loss of SIS junction mixers  
379
- McKellar, B. H. J.—  
See Hollenberg, L. C. L. 449
- McKoy, V., Dixit, S. N., Dubs, R. L., and  
Lynch, D. L.—  
Dynamics of single- and multi-photon  
ionisation processes in molecules 761
- Manson, S. T.—  
See Deshmukh, P. C. 679
- Manson, S. T., and Bhattacharya, S. K.—  
Photoionisation of unusual states of matter:  
atomic ions, excited states and open-shell  
atoms 799

- Mardling, R.—  
See Hoare, R. 505
- Melrose, D. B.—  
Four-wave processes involving two low frequency waves 891
- Melrose, D. B., and Padden, W. E. P.—  
Comptonisation of radiation below the cyclotron frequency in a strong magnetic field 961
- Moodie, A. F.—  
See Glanvill, S. R. 71
- Morton, A. H.—  
See Cheetham, A. D. 35
- Nayak, P.—  
Phonon spectrum of ternary alloys 547
- Naylor, G. R. S., and Robson, R. E.—  
Interpretation of backscattered HF radio waves from the sea 395
- Nelin, C. J.—  
See Bagus, P. S. 731
- Ninio, F.—  
See Hua, G. 309
- Nuclear physics*  
Analytic distorted wave approximation for electropion and photopion production on  $^{12}\text{C}$  near threshold 203
- Discrepancy in the Fermi matrix elements of the isospin-forbidden  $4^+ \rightarrow 4^+ \beta^-$  decay of  $^{46}\text{Sc}$  473
- Enhancement of parity violation for overlapping nuclear resonances 217
- Excitation function for  $^{16}\text{O} + ^{24}\text{Mg}$  elastic scattering at  $\theta_{\text{c.m.}} = 90^\circ$  369
- Particle-hole description of dipole states in  $^{17}\text{O}$  871
- Phenomenological nucleon-nucleon interaction 461
- Superaligned Fermi  $\beta$  decays, CVC and universality 1
- Nurzynski, J.—  
See Drumm, P. V. 369
- O'Keefe, M. J., and Francey, J. L. A.—  
The effect of the flow distribution on the thermal efficiency of a solar collector 945
- Ophel, T. R.—  
See Drumm, P. V. 369
- Padden, W. E. P.—  
See Melrose, D. B. 961
- Pailthorpe, B. A.—  
See Schmid, R. 919
- Peel, J. B.—  
See Carnovale, F. 789
- Pender, L. F.—  
See Hay, H. J. 15
- Petris, L.—  
See Berge, L. 461
- Petrović, Z. Lj.—  
The application of Blanc's law to the determination of the diffusion coefficients for thermal electrons in gases 237  
The determination of the diffusion coefficient for thermal electrons in water vapour by the use of a modified Blanc's law procedure 249
- Phillips, R. A., and Larkins, F. P.—  
X-ray emission spectra of some carbon-containing molecules 717
- Plummer, E. W.—  
See Eberhardt, W. 633, 853
- Prokhovnik, S. J.—  
See Lau, Y. K. 339
- Radeka, V.—  
See Schoenborn, B. P. 329
- Rasche, G.—  
See Jaus, W. 1
- Reininger, R.—  
See Eberhardt, W. 633
- Richards, J. A.—  
See Larkins, F. P. 809
- Robinson, P. A.—  
Dielectric tensor of weakly relativistic electron distributions separable in momentum and pitch angle 57
- Robson, B. A.—  
See Drumm, P. V. 369
- Robson, R. E.—  
See Naylor, G. R. S. 395
- Rossiter, P. L.—  
Conduction electron scattering in alloys 529
- Rothwell, R. G.—  
See Carnovale, F. 789
- Runciman, W. A., Srinivasan, B., and Saebø, S.—  
Electronic structure of the principal uranium centre in alkali fluorides 555
- Saebø, S.—  
See Runciman, W. A. 555
- Sato, N., and Haydon, S. C.—  
Ionization growth between hyperboloidal needle and plane electrode under r.f. electric fields in  $\text{N}_2$ .  
I. Image intensifier observations and the influence of space charge accumulations 271  
II. Spectroscopic investigations 293

- Saw, E. L., and Yap, C. T.—  
The discrepancy in the Fermi matrix elements  
of the isospin-forbidden  $4^+ \rightarrow 4^+ \beta^-$  decay of  
 $^{46}\text{Sc}$  473
- Saxena, A. M.—  
See Schoenborn, B. P. 329
- Schirmer, J.—  
See von Niessen, W. 687
- Schmid, R., Pailthorpe, B. A., and Collins,  
R. E.—  
Heat transport in liquid filled tubes 919
- Schoenborn, B. P., Saxena, A. M., Stamm, M.,  
Dimmler, G., and Radeka, V.—  
*Corrigendum to: A neutron spectrometer with  
a two-dimensional detector for time-  
resolved studies* 329
- Sharp, L. E.—  
See Cheetham, A. D. 35
- Sheeley, N. R., Jr.—  
See DeVore, C. R. 115
- Singh, V., and Grover, P. S.—  
Numerical simulation of positron diffusion in  
the heavy noble gases Ar, Kr and Xe 497
- Slee, O. B.—  
See Alurkar, S. K. 433
- Slee, O. B., Alurkar, S. K., and Bobra, A. D.—  
Flux densities, spectra and variability of  
pulsars at metre wavelengths 103
- Smith, R.—  
See Drumm, P. V. 369
- Sondericker, D.—  
See Eberhardt, W. 633
- Srinivasan, B.—  
See Runciman, W. A. 555
- Stamm, M.—  
See Schoenborn, B. P. 329
- Steeb, W.-H.—  
See Eckhardt, B. 331
- Tallents, G. J., Luther-Davies, B., and  
Horsburgh, M. A.—  
EXAFS spectroscopy by continuum soft X-ray  
emission from a short pulse laser-produced  
plasma 253
- Tambe, B. R.—  
See Deshmukh, P. C. 679
- Tan, K. H.—  
See Brion, C. E. 565
- Tomasello, P.—  
See von Niessen, W. 687
- Tovey, S. N.—  
See Clark, A. G. 117
- Treacy, P. B.—  
See Hay, H. J. 15
- Troup, G. J.—  
See Hoare, R. 505
- van der Meer, W. J., Butselaar, R. J., and de  
Lange, C. A.—  
Photoionisation cross sections of chlorine  
atoms and molecules at 584 Å 779
- von Nagy-Felsobuki, E. I.—  
See Doherty, G. 749
- von Niessen, W., Tomasello, P., Schirmer, J.,  
and Cederbaum, L. S.—  
Recent progress in a Green's function method  
for the calculation of ionisation spectra  
687
- Whitbourn, L. B.—  
See Macfarlane, J. C. 379
- Whitfield, H. J.—  
See Glanvill, S. R. 71
- Williams, J. F.—  
Polarisation and angular correlations of  
excited P states of helium and hydrogen  
621
- Williams, O. M., and Elford, M. T.—  
The dependence of measured drift velocity on  
shutter open time in the four gauze time-of-  
flight method 225
- Wilson, I. J.—  
See Glanvill, S. R. 71
- Yap, C. T.—  
See Saw, E. L. 473
- Young, T. R., Jr.—  
See DeVore, C. R. 115

